ABSTRACT OF THE INVENTION

According to specific embodiments of the invention, a technique is described

5   for providing constant bit rate (CBR) service over shared access channels in a

computer network. The technique of the present invention provides a plurality of

linked lists of grant allocation elements at the head end of the network for

implementing CBR service to requesting nodes on each shared access channel. Each

grant allocation element corresponds to a respective unsolicited CBR grant allocated

10   to a particular node on a selected channel. A CBR service request sent by a particular

node to the head end is handled by an admission control engine within the head end.

If admission control admits the CBR service request, it inserts one or more

unsolicited grant allocation elements relating to the admitted request in at least one of

the plurality of linked lists. Each linked list of grant allocation elements is used to

15   generate a CBR portion of a respective, fixed size, grant allocation MAP message.

Each grant allocation MAP message includes a first portion of N minislot allocations

reserved primarily for CBR purposes, and a second portion of M minislot allocations

reserved primarily for non-CBR purposes. Using the technique of the present

invention voice traffic or other CBR applications may be supported on shared access

20   channels with delay bound and zero jitter.